Claims

1.A method of processing dual energy images comprising:

obtaining a first image generated at a first energy level;

obtaining a second image generated at a second energy level different than the first energy level;

pre-processing said first image and said second image;

decomposing said first image and said second image to form a raw soft-tissue image and a raw bone image;

post-processing the raw soft-tissue image to form a processed soft-tissue image;

post-processing the raw bone image to form a processed bone image;

display processing the processed soft-tissue image and the processed bone image.

[c2] 2.The method of claim 1 wherein:

said pre-processing includes performing scatter correction on the first image and the second image.

[c3] 3.The method of claim 1 wherein:

said pre-processing includes performing noise reduction on the first image and the second image.

[c4] 4.The method of claim 1 wherein:

said pre-processing includes performing registration on at least one of the first image and the second image to correct motion artifacts.

[c5] 5.The method of claim 1 wherein:

said post-processing the raw soft-tissue image includes adjusting the contrast of the raw soft-tissue image to match a predetermined contrast.

[c6] 6.The method of claim 1 wherein:

said post-processing the raw soft-tissue image includes performing noise reduction on the raw soft-tissue image.

[c7] 7.The method of claim 1 wherein:

said post-processing the raw soft-tissue image includes performing

presentation processing on the raw soft-tissue image.

[c8] 8.The method of claim 1 wherein:

said post-processing the raw bone image includes adjusting the contrast of the raw bone image to match a predetermined contrast.

[c9] 9.The method of claim 1 wherein:

said post-processing the raw bone image includes performing noise reduction on the raw bone image.

[c10] 10.The method of claim 1 wherein:

said post-processing the raw bone image includes performing presentation processing on the raw bone image.

[c11] 11.The method of claim 1 wherein:

said display processing includes displaying at least one of the processed soft-tissue image, the processed raw bone image and a standard image derived from the first image.

[c12] 12.The method of claim 11 wherein:

said display processing includes displaying the processed soft-tissue image, the processed raw bone image and the standard image in a timed sequence.

[c13] 13.The method of claim 1 wherein:

said display processing includes performing computer aided diagnosis on at least one of said processed soft-tissue image and said processed bone image and displaying results of said computer aided diagnosis.

[c14] 14.The method of claim 1 wherein:

said display processing includes designating display options for at least one of the processed soft-tissue image and the processed bone image.

[c15] 15.A method of examining a structure comprising:

exposing the structure to an energy source at a first energy level;

acquiring a first image of the structure;

exposing the structure to an energy source at a second energy level different than the first energy level;

acquiring a second image of the structure;

pre-processing said first image and said second image;

decomposing said first image and said second image to form a raw soft-tissue image and a raw bone image;

post-processing the raw soft-tissue image to form a processed soft-tissue image;

post-processing the raw bone image to form a processed bone image;

display processing the processed soft-tissue image and the processed bone image.

[c16]   16.The method of claim 15 wherein:

the structure is a portion of a human;

said acquiring the first image including using cardiac gating to acquire the first image at a specific point in a cardiac cycle.

[c17]   17.The method of claim 15 wherein:

said acquiring the first image includes adjusting the first image in response to a detector correction.

[c18]   18.The method of claim 15 wherein:

the structure is a portion of a human;

said acquiring the second image including using cardiac gating to acquire the second image at a specific point in a cardiac cycle.

[c19]   19.The method of claim 15 wherein:

said acquiring the second image includes adjusting the second image in response to a detector correction.

[c20]   20.The method of claim 15 wherein:

said display processing includes performing computer aided diagnosis on at least one of said processed soft-tissue image and said processed bone image and displaying results of said computer aided diagnosis.

[c21]   21.The method of claim 15 wherein:

said display processing includes designating display options for at least one of the processed soft-tissue image and the processed bone image.

[c22]   22.The method of claim 15 wherein:

said display processing includes displaying the processed soft-tissue image, the processed raw bone image and a standard image derived from the first image in a timed sequence.

[c23]   23.A dual energy imaging system comprising:

an energy source generating photons at a first energy level and a second energy level different than the first energy level;

a detector generating a first image representative of the photons at the first energy level passing through a structure and a second image representative of the photons at the second energy level passing through the structure;

a memory coupled to the detector, said memory storing the first image and the second image;

a processing circuit coupled to said memory, said processing circuit

pre-processing said first image and said second image;

post-processing the first image to form a processed first image;

post-processing the second image to form a processed second image;

a display device coupled to said processor, said display device displaying one of the processed first image and the processed second image.

[c24]   24.A dual energy imaging system comprising:

energy means for generating photons at a first energy level and a second energy level different than the first energy level;

detection means for generating a first image representative of the photons at the first energy level passing through a structure and a second image representative of the photons at the second energy level passing through the structure;

storage means for storing the first image and the second image;

processing means for:

pre-processing said first image and said second image;

decomposing said first image and said second image to form a raw soft-tissue image and a raw bone image;

post-processing the raw soft-tissue image to form a processed soft-tissue image;

post-processing the raw bone image to form a processed bone image;

display means for displaying one of the processed soft-tissue image and the processed bone image.

[c25]   25. A computer program product for processing dual energy images, the product comprising:

a storage medium readable by a processing circuit and storing instructions for execution by the processing circuit for:

obtaining a first image generated at a first energy;

obtaining a second image generated at a second energy different than the first energy level;

pre-processing said first image and said second image;

decomposing said first image and said second image to form a raw soft-tissue image and a raw bone image;

post-processing the raw soft-tissue image to form a processed soft-tissue image;

post-processing the raw bone image to form a processed bone image;

display processing the processed soft-tissue image and the processed bone image.